

5 Claims

I claim:

1. A tower reinforcement apparatus comprising:
10 an upper collar assembly parallel with a lower collar assembly, wherein the upper collar assembly is spaced a selected distance from the lower collar assembly,
 a plurality of flat bars attached to the upper and the lower collar assemblies,
 securing means to attach the upper and the lower collar assemblies to a tower,
 at least one ring disposed between the upper and the lower collar assemblies,
15 wherein the ring encircles the flat bars and the tower so that the flat bars are held in compression with the tower.
2. The tower reinforcement apparatus as recited in Claim 1, wherein the flat bars
20 are vertically positioned between the upper and the lower collar assemblies.
3. The tower reinforcement apparatus as recited in Claim 1, wherein the securing
 means comprising a plurality of mounting blocks, said mounting blocks comprising a flat
 portion that is secured to an outer surface of the tower and an inner surface of the
 upper or the lower collar assembly.
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4. The tower reinforcement apparatus as recited in Claim 3, wherein the mounting
 blocks are secured by welding.
5. The tower reinforcement apparatus as recited in Claim 1, wherein the upper
30 collar assembly comprising first and second upper collars, said first and said second upper collars each comprising an upper collar mount plate disposed on opposite ends, wherein the upper collar mount plates of the first upper collar are joined with the upper collar mount plates of the second upper collar to form the upper collar assembly.

- 5 6. The tower reinforcement apparatus as recited in Claim 1, wherein the lower collar assembly comprising first and second lower collars, said first and said second lower collars each comprising a lower collar mount plate disposed on opposite ends, wherein the lower collar mount plates of the first lower collar are joined with the lower collar mount plates of the second lower collar to form the lower collar assembly.
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7. The tower reinforcement as recited in Claim 1, wherein the upper collar assembly and the lower collar assembly are formed to wrap around the tower.
8. The tower reinforcement as recited in Claim 1, wherein the upper and the lower collar assemblies each further comprising a plurality of tab plates sized to receive the flat bar.
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9. The tower reinforcement apparatus as recited in Claim 1, wherein the flat bars vertically extend the selected distance between the upper collar assembly and the lower collar assembly.
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10. The tower reinforcement apparatus as recited in Claim 8, wherein an end of the flat bar is fixedly received by the tab plates.
11. The tower reinforcement apparatus as recited in Claim 1, wherein the at least one ring is parallel to the upper and the lower collar assemblies.
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12. The tower apparatus as recited in Claim 11, wherein the at least one ring is spaced apart at intervals of approximately two (2) feet.
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13. The tower reinforcement apparatus as recited in Claim 1, further comprising a base flange positioned at a lower end of the tower, said base flange comprising a plurality of brackets sized to receive the flat bar.

- 5 14. A tower reinforcement apparatus for increasing the load capacity and stability of
a tower, the tower reinforcement apparatus comprising:
 an upper collar assembly including a plurality of upper tab plates,
 a lower collar assembly including a plurality of lower tab plates, wherein the
lower collar assembly is parallel with the upper collar assembly, and said upper collar
10 assembly is spaced a selected distance from the lower collar assembly, said upper
collar assembly and said lower collar assembly are each formed to wrap around an
outer surface of the tower,
 a plurality of flat bars, wherein one end of the flat bar is attached to the upper tab
plates of the upper collar assembly and an opposite end of the flat bar is attached to
15 the lower tab plates of the lower collar assembly,
 a plurality of mounting blocks,
 at least one ring disposed between the upper and the lower collar assemblies,
 wherein the ring encircles the flat bars and the tower so that the flat bars are held
in compression with the tower.
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15. The tower reinforcement apparatus as recited in Claim 14, wherein the flat bars
are vertically positioned between the upper and the lower collar assemblies.
16. The tower reinforcement apparatus as recited in Claim 14, wherein the mounting
25 blocks are secured between the upper collar assembly and the tower.
17. The tower reinforcement apparatus as recited in Claim 14, wherein the mounting
blocks are secured between the lower collar assembly and the tower.
- 30 18. The tower reinforcement apparatus as recited in Claim 14, wherein the upper
collar assembly comprising first and second upper collars, said first and said second
upper collars each comprising an upper collar mount plate disposed on opposite ends,
wherein the upper collar mount plates of the first upper collar are joined with the upper
collar mount plates of the second upper collar to form the upper collar assembly.

19. The tower reinforcement apparatus as recited in Claim 14, wherein the lower collar assembly comprising first and second lower collars, said first and said second lower collars each comprising a lower collar mount plate disposed on opposite ends, wherein the lower collar mount plates of the first lower collar are joined with the lower collar mount plates of the second lower collar to form the lower collar assembly.

20. The tower reinforcement apparatus as recited in Claim 14, wherein the flat bars vertically extend the selected distance between the upper collar assembly and the lower collar assembly.

21. The tower reinforcement apparatus as recited in Claim 14, wherein the at least one ring is parallel to the upper and the lower collar assemblies.

22. The tower reinforcement apparatus as recited in Claim 14, further comprising a base flange positioned at a lower end of the tower, said base flange comprising a plurality of brackets sized to receive the flat bar.